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PRECISION CARTOGRAPHIC MAP OF THE MPL/DS2 LANDING SITE

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A precision map of the Mars Polar Lander (MPL) and Deep Space 2 (DS2) Microprobe landing site was produced using a new approach to Mars planetary cartography. Spatial (latitude and longitude) as well as topographic control was derived totally from over 300,000 Mars Global Surveyor (MGS) Mars Orbiter Laser Altimeter (MOLA) observations of the site. The MOLA data yielded a precision digital terrain model (DTM) of the site. Then Viking Orbiter-2 images from orbit 479B were registered and map projected to the MOLA DTM to produce a controlled digital image model (DIM), having a spatial resolution of 120 m/pixel (512 pixles/deg). This DIM was used for selecting the final landing site and for targeting the last 2 trajectory correction maneuvers to the selected site.

This work was carried out at the Jet Propulsion Laboratory, California Institute of Technology under contract to the National Aeronautics and Space Administration, Mars Characterization Program.